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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/529,161
Filing Date: February 27, 2006
Appellant(s): MUELLER, CHRISTIAN

Lawrence E. Ashley
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 21, 2010 appealing from the Office action mailed December 1, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:
1, 2, 4-17, and 19-21.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The 112 rejections in the final rejection of December 1, 2009 are withdrawn, as being overcome by the after final amendment of February 26, 2010.

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

| | | |
|-----------|--------------|--------|
| 5,931,048 | Slocum et al | 8/1999 |
|-----------|--------------|--------|

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-17 and 19-21 are rejected under 35 U.S.C. § 103 as obvious over Slocum et al. Slocum et al discloses a first embodiment of a positioning apparatus comprising a support (412) coupled to and supporting a test head (108), attached to a second member; a lifting device, for raising and lowering the second member, including a drive motor (406), at a first end of the apparatus, mounted to a base (404) and operating a lead screw mechanism (including 410, 462); and a position sensor for detecting a vertical position of the test head (e.g. column 2 line 46-51); wherein the support and second member is at a second end of the apparatus, above the drive motor; but does not

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disclose a first member at least partially above and movable relative to the second member, independent of the lifting device; a pressure regulator maintaining a pressure within a variable fluid compartment, defined by an interior of the first member and a top of the second member, by allowing feeding or removal of fluid to and from, respectively, the compartment, responsive to a change in pressure, in order to increase or decrease a size of the compartment; wherein the compartment is above the lifting device, such that the lifting device drives the compartment in a vertical direction.

Slocum et al teaches, for a second embodiment of a positioning apparatus (fig 4B), comprising a support coupled to and supporting a test head, attached to a lifting device, for raising and lowering the support, including a drive motor (including 456), operating a lead screw mechanism (including 460), and being at a first end of the apparatus; a second member (468) interacts with the lead screw and is near a second end of the apparatus; that the apparatus includes a first member (470), being at the second end of the apparatus and defining a variable fluid compartment (472), in an interior of the first member and a portion of the second member; wherein a pressure regulator (e.g. column 7 line 12-13) maintains a pressure in the fluid compartment, by allowing feeding or removal of fluid to and from, respectively, the compartment, responsive to a change in pressure, in order to increase or decrease a size of the compartment, such that the support is movable relative to the first member, independent of the lifting device, such that the test head is suspended in a substantially weightless vertically adjustable position, for providing compliance to the system along the vertical axis (column 7 line 21-22).

Since both embodiments are from the same field of endeavor, the purpose disclosed by the second embodiment would have been recognized in the pertinent art of the first embodiment. It would have been obvious at the time the invention was made to one having ordinary skill in the art to add a first member, to the second end of the apparatus of the first embodiment of Slocum et al, which defines a variable fluid compartment, in an interior of the first member and a portion of the second member; wherein a pressure regulator maintains a pressure in the fluid compartment, by allowing feeding or removal of fluid to and from, respectively, the compartment, responsive to a change in pressure, in order to increase or decrease a size of the compartment, such that the support is movable relative to the first member, independent of the lifting device, such that the test head is suspended in a substantially weightless vertically adjustable position, as taught by the second embodiment of Slocum et al, for providing compliance to the system along the vertical axis.

When the first member is added to the second member of the first embodiment, the support would be attached to the first member, and the fluid compartment would be formed by a top portion of the second member.

Claims 1-17 and 19-21 are rejected under 35 U.S.C. § 103 as obvious over Slocum et al. Slocum et al discloses a second embodiment of a positioning apparatus (fig 4B), comprising a support (412) coupled to and supporting a test head (108), attached to a lifting device, for vertically raising and lowering the support, including a first member (470), being at a bottom end of the apparatus, at least partially below a

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second member (468), and defining a variable fluid compartment (472), in an interior of the first member and a bottom portion of the second member; wherein a pressure regulator (e.g. column 7 line 12-13) maintains a pressure in the fluid compartment, by allowing feeding or removal of fluid to and from, respectively, the compartment, responsive to a change in pressure, in order to increase or decrease a size of the compartment, such that the support is movable relative to the first member, independent of the lifting device, such that the test head is suspended in a substantially weightless vertically adjustable position, for providing compliance to the system along the vertical axis (column 7 line 21-22); wherein the lifting device includes a drive motor (including 456), operating a lead screw mechanism (including 460), and being at a top end of the apparatus; with the second member interacting with the lead screw; and a position sensor for detecting a vertical position of the test head (e.g. column 2 line 46-51);but does not disclose that the compartment is defined by a top of the second member and is above the drive mechanism; or that the first member is at least partially above the second member.

Slocum et al teaches, for a first embodiment of a positioning apparatus comprising a support (412) coupled to and supporting a test head (108), attached to a second member; a lifting device, for raising and lowering the second member, including a drive motor (406), being at one end of the apparatus, mounted to a base (404) and operating a lead screw mechanism (including 410, 462); wherein the support and second member is at a second end of the apparatus; that the drive mechanism is below the compartment and test head in a vertical direction.

A comparison of the first and second embodiments by one having ordinary skill in the art would suggest that the lifting device can be oriented, such that the drive motor can be either at the top (second embodiment) or at the bottom (first embodiment) of the positioning apparatus. Therefore, It would have been obvious at the time the invention was made to one having ordinary skill in the art to orient the lifting device of the second embodiment of Slocum et al, such that the drive motor is at the bottom of the positioning apparatus, as taught by the first embodiment of Slocum et al, since one having ordinary skill in the art would have been able to carry out such a reorientation and the resulting combination would predictably work in the same manner.

When the lifting mechanism of the second embodiment is reoriented (i.e. by essentially rotating the lifting mechanism of the fig 4b embodiment by 180 degrees, such that the drive motor is at a bottom position and the first member is at a top position), all the limitations would be met by bottom portions becoming top portions and elements being below certain other elements changing to being above those elements.

(10) Response to Argument

Before discussing Appellant's arguments, the examiner would like to discuss Slocum et al. Slocum et al discloses 2 embodiments, each showing a lifting device. Each lifting device includes a drive motor (406, 456) rotating a lead screw device (410, 460), which causes a support (412) to be raised or lowered. The first embodiment (fig 4A) has the drive motor (406) stationary (i.e. attached to the base 402), below the lead screw device and support. The second embodiment (fig 4B) has the drive motor above the lead screw device, and attached to and moved with the support. These 2 embodiments would suggest to one of ordinary skill in this art that the drive mechanism of Slocum et al can be in one of 2 equivalent orientations. The first orientation is with the

drive motor stationary, below the lead screw, and the second is with the drive motor moving with the support, and being above the lead screw.

The second embodiment adds a device for providing compliance (column 7 line 19-23) to the lead screw device, which the lead screw device of the first embodiment does not have. This device includes a first member (470) forming a variable sized fluid compartment with a second member (468) of the drive mechanism. The first and second members are connected to the lead screw device on an end opposite to the drive motor, such that the second member is closer to the drive motor than the first member.

A. First stated rejection

1. Appellant states that this first rejection should be withdrawn, since it is unclear.

Based on Appellants remarks and drawings, it is clear that Appellant has failed to understand the rejection.

Appellant's view of combining the first and second embodiments is to mount the second embodiment on the first embodiment (fig page 7). Then Appellant states that this is completely inoperative (the examiner agrees Applicant's interpretation is inoperative). But this is not what the rejection is describing.

The teaching of the second embodiment recognizes that there is a purpose for adding a first member to a second member of a lead screw device supporting a test head (i.e. compliance); and ascertains how this first member is to be added to the second member of the lead screw device. The second embodiment has a first member (470) forming a variable sized fluid compartment with a second member of the lead screw device at an end opposite the end at which the drive motor is connected, with the first member surrounding the second member, and farther away from the drive motor

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than the second member. This would lead one of ordinary skill to mount the second member to the top of the lead screw of the first embodiment (since this is opposite the bottom end where the drive motor is connected); with the first member above the second member (since this would put it farther away from the drive motor, than the second member). This first member would then be fixed to the support, so that the lead screw device can raise and lower the device, while the first and second members allow compliance between the lead screw device and the support. The examiner contends that this is what is taught by the 2 embodiments of Slocum et al, starting with the first embodiment (fig 4A) and that this combination is operable and meets the claimed limitations.

2. Appellant cites a part of the rejection, which attempts to clarify how the first member is mounted to a second member of the lead screw, and states that it is not apparent why the first and second rejections are different.

This first rejection starts with a lifting device in the same orientation as disclosed by the instant invention, without the first member; and adds a first member, for the purpose of having compliance. The second rejection starts with a lifting device that has first and second members, in a different orientation, and uses a teaching that changes its orientation (as discussed below).

B. Second stated rejection

1. Appellant argues that the second rejection has no articulated reasoning with any rational underpinning to rotate the second embodiment 180 degrees, and therefore the rejection is improper.

First, what is rotated is not the second embodiment. Rather it is the lifting device of the second embodiment, which is rotated to connect the drive motor to the base, instead of the support. The rationale for doing this is that Slocum et al suggests it in the body of the specification. By showing 2 embodiments, with one having the drive motor connected to the support and the other having the drive motor connected to the base, one of ordinary skill would understand that the orientation of the lifting device does not matter, and that either orientation is equivalent to the other orientation. Equivalence is an accepted rationale for modifying a reference.

The discussion of rotating the lifting device was to help visualize the modification to the second embodiment. The rejection uses the teaching that it is equivalent to orient the lifting device so that the drive motor is either at the top or the bottom of the lifting device (i.e. either attached to the support or the base).

2. Appellant argues that the functionality of the device is destroyed, by rotating the second embodiment 180 degrees. The embodiment has the cavity (474) secured to a base 404. When it is rotated, it is no longer secured to the base and therefore, inoperable. Furthermore, the rejection is incomplete, since Appellant does not have a clear picture of how the second embodiment can be “flipped over”.

It is unclear how rotating the lifting device of the second embodiment by 180 degrees destroys its functionality. It is understood that the top of the second embodiment (i.e. 464, 462) is somehow connected to the support (412, fig 4A, see also column 6 line 66-67). Yes, the first member (470) is no longer secured to the base. But when rotated to a 180 degree orientation, it will be secured to the support (412), and the

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“top” (462, 464) will then be secured to the base. Actuating the drive motor will still drive the lead screw which will raise and lower the support. And the first member will still allow the support to have compliance with the lead screw. Therefore, the modification does not destroy the embodiment.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/F. Daniel Lopez/

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